

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1. (Previously presented) A composite surgical implant comprising a sheet of a thermoplastic resin having a top surface and a bottom surface, and a surgical grade metal mesh comprising bridges separated by interstices, the mesh embedded in the sheet of resin such that resin is formed around at least a portion of the mesh, and in that portion, the resin fills the interstices of the mesh and is in contact with all surfaces of the mesh, wherein the implant is able to be bent or displaced by manipulation by hand, wherein upon displacement, the implant will generally maintain the shape to which it has been displaced.

2. (Previously presented) The implant recited in claim 1 wherein the metal comprises titanium.

3. (Currently amended) The implant recited in claim 1 wherein the top surface further comprises a smooth solid barrier surface.

4. (Currently amended) The implant recited in claim 3, wherein the bottom surface comprises a smooth solid barrier surface.

5. (Previously presented) The implant recited in claim 3 wherein the bottom surface comprises a porous surface.

6. (Previously presented) The implant recited in claim 5 wherein pores of the porous surface are sized to allow fibrovascular ingrowth.

7. (Previously presented) The implant as recited in claim 1 wherein the thermoplastic resin comprises polyethylene.

8. (Previously presented) The implant as recited in claim 5 wherein the porous surface comprises a high density polyethylene.

9. (Previously presented) The implant as recited in claim 1, further comprising at least one porous surface to allow for fibrovascular ingrowth.

10. (Original) The implant recited in claim 1 further comprising means for attachment to bone.

11. (Previously presented) The implant as recited in claim 10 wherein said means comprise at least one opening in the mesh that will receive and engage the head of a surgical screw or surgical bone anchor.

12. (Currently amended) A method of making a surgical implant comprising placing a metallic mesh material having interstitial spaces in the bottom of a mold, introducing thermoplastic resin fines into ~~said receptacle~~ the mold to allow said fines to fill the bottom of said mold and the interstitial spaces of the mesh, placing a sheet of thermoplastic resin over said fines and said mesh, placing a mold top over said sheet and applying heat and pressure to components contained in said mold to allow said fines to partially melt and to fuse to one another, whereby an implant is constructed having a smooth solid barrier surface and an opposite porous surface.

13. (Previously Presented) The method of making an implant as recited in claim 12 wherein said first step comprises placing a thin sheet on the bottom surface of the cavity of said mold, whereby the implant created comprises barriers on opposite sides of said mesh.

14. (Currently amended) A method of reconstruction of a bone defect comprising,

- (a) providing a surgical implant having (i) a top and bottom surface comprised of thermoplastic resin and (ii) a metallic mesh comprising bridges separated by interstices, the mesh embedded in the ~~sheet of~~ resin such that resin is formed around at least a portion of the mesh, and in that portion, the resin fills the interstices of the mesh and is in contact with all surfaces of the mesh;
- (b) providing a fastener;
- (c) bending the surgical implant to conform to the profile of the defect, and

(d) attaching the implant to bone in proximity with said defect using the fastener.

15. (Previously presented) The method of reconstruction recited in claim 14 wherein the defect is in a human.

16. (Previously presented) The method of reconstruction recited in claim 14 wherein the defect is on the cranium.

17. (Previously presented) The method of reconstruction recited in claim 14 wherein the defect is in the orbit.

18. (Currently amended) The method of reconstruction recited in claim 17 wherein the implant further comprises a top smooth solid barrier surface and a bottom porous surface and the implant is positioned in the orbit with the top smooth solid barrier surface oriented toward the orbit.

19. (Previously presented) The method of reconstruction as recited in claim 14 wherein the attaching step comprises introduction of mechanical fasteners through the mesh of the implant and into the bone tissue.

20. (Previously presented) The method of reconstruction as recited in claim 19 wherein the mechanical fasteners comprise surgical screws.

21. (Previously presented) The method of reconstruction recited in claim 14 further comprising a step of cutting the implant to conform to the shape of the defect.

22. (Currently amended) A surgical implant comprising a ~~sheet of porous~~ polyethylene matrix wherein all sides of the implant have porous surfaces ~~having a top surface and a bottom surface~~ and a surgical grade metal mesh ~~contained therein~~ embedded within the matrix such that the porous polyethylene matrix fills spaces ~~between~~ within the mesh, wherein ~~the top surface and the bottom surface comprise~~ the porous polyethylene matrix comprises with pores that are sized between 20-500 microns, and wherein the implant is able to be bent or displaced by manipulation by hand such that the implant will generally maintain the shape to which it has been displaced.

23. (Currently amended) A surgical implant having a top surface and a bottom surface, the implant comprising a sheet of porous polyethylene matrix ~~having a top surface and a bottom surface~~ and a surgical grade metal mesh ~~contained therein~~ embedded within the matrix such that the porous polyethylene matrix fills spaces ~~between~~ within the mesh, wherein the top surface comprises a solid barrier surface of polyethylene and the bottom surface comprises the porous polyethylene matrix with pores that are sized between 20-500 microns, and wherein the implant is able to be bent or displaced by manipulation by hand such that the implant will generally maintain the shape to which it has been displaced.

24. (Previously presented) The implant recited in claim 1, wherein the thermoplastic resin is a porous resin throughout the implant.

25. (Previously presented) The implant of claim 22, wherein the polyethylene is porous throughout the implant.